

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to FIG. 2. This sheet, which includes FIG. 2 replaces the original sheet including FIG. 2. In FIG. 2, the reference characters not previously mentioned in the specification have been removed.

Attachment: Replacement Sheet

REMARKS

In the Official Action mailed on **29 May 2007**, the Examiner reviewed claims 11-25. The drawings were objected to as failing to comply with 37 CFR 1.84(p)(5). The disclosure is objected to. Claims 13, 14, 21 and 22 were rejected under 35 U.S.C. 112. Claims 11, 12, 15-20 and 23-25 were rejected under 35 U.S.C. 103(a) based on McMillen et al. (USPN 5,872,904, hereinafter McMillen), and Nounin et al. (USPN 5,203,027, hereinafter Nounin).

Objection to the Drawings

Examiner objected to the drawings as failing to comply with 37 C.F.R. 1.84(p)(5) because they included reference characters not mentioned in the description.

Applicant has amended FIG. 2 to remove reference characters not mentioned in the description.

Objection to the Specification

Examiner objected to the disclosure because the disclosure contained attorney docket numbers and because the disclosure did not include the application numbers of listed non-provisional applications.

Applicant has amended the specification to overcome these objections.

Rejections under 35 U.S.C. § 112

Examiner rejected claims 13, 14, 21 and 22 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. More specifically, Examiner argued that the specification failed to enable one of ordinary skill in the art to make and/or use the “shelf software loop” recited in the rejected claims.

Applicant respectfully points out that the term “shelf software loop” is known in the art of communication systems. As used in the art, “shelf software loop” indicates the software that controls a communication system (in much the same way an operating system controls a common computer system). Applicant has amended the specification to clarify the meaning of shelf software loop. No new matter has been added.

Rejections under 35 U.S.C. § 103(a)

Examiner rejected claims 11-12, 15-20, and 23-25 were rejected under 35 U.S.C. § 103(a) based on McMillen in view of Nounin. More specifically, Examiner argued that it would have been obvious at the time of the invention was made to incorporate the teachings of Nounin with McMillen so as to enhance network performance by equalizing the incoming signal with large error deviations via the adjustable tap. Applicant respectfully disagrees. Applicant points out that the adjustment of the adjustable tap in Nounin is fundamentally distinct from embodiments of the present invention because the Nounin system is limited to adjusting the tap within a receiver before the data is received.

Generally, the Nounin system selects a diversity branch in a receiver having the best overall quality of received signal. During the selection process in the Nounin system:

[T]he plurality of diversity branches are arranged in parallel so as to respectively receive radio waves carrying the already-known training signals and data signals following the training signals. Each of the received signals is demodulated into a suitable intermediate frequency or a baseband frequency by the signal receiving means, the sampled by the converting means so as to be converted into a training signal and a data signal comprising a group of code elements. Thereafter, the resultant signals are transmitted to the adaptive equalization means. In the adaptive equalization means, each code element of the training signal are successively transmitted at first, **then prior to the processing of the data**

signal, the adaptive equalization means is subjected to the learning so as to give the most suitable equalizing function thereto.

...

Then, the total sum of the averages obtained from each changing intensity of error signals is the diversity branches is calculated and a diversity branch having the minimum sum of each intensity of the error signal is selected because of carrying out the most suitable equalization in the diversity receiver. (see Nounin, col. 4, lines 25-40 and lines 57-62).

After the diversity branch is selected:

the data signal **is equalized by the adaptive equalization means of the selected diversity branch**" (see Nounin, col. 4, lines 63-65).

In other words, Nounin discloses adjusting the adaptive equalizing means using a training signal and then applying that equalization function to the received data signal **without adjusting the equalization function**. Moreover, all the operations of the Nounin system are carried out **in the receiver alone** and **require the use of a reference signal**. Nounin does not disclose dynamically: (1) determining an adjustment coefficient for an adjustable tap based on information sent to a transmitter from a receiver on the back channel, and (2) applying the adjustment to adjust the adjustable tap **while data is being transmitted**.

In contrast, in embodiments of the present invention a transmitter transmits a data stream through the communications channel. Upon receiving the data stream, a receiver uses the data stream to determine information which is representative of the adjustable coefficient of an adaptive transmit equalizer in the transmitter. The receiver then transmits the information representative of the adjustable coefficient to the transmitter on a back channel. The transmitter dynamically determines an adjustment coefficient for the adaptive transmit equalizer based on information from the back channel and applies the adjustment coefficient to adjust the adjustable tap (see instant application claim 1 and page

11-12). In other words, embodiments of the present invention **dynamically adjust an adaptive transmit equalizer while data is being transmitted from the transmitter to the receiver** to improve the transmission properties of data signals **from the transmitter based on the signal received at the receiver**.

Applicant respectfully points out that Nounin is limited to limited to adjusting the tap within a receiver before the data is received. Nounin does not disclose dynamically: (1) determining an adjustment coefficient for an adjustable tap based on information sent to a transmitter from a receiver on the back channel, and (2) applying the adjustment to adjust the adjustable tap.

Applicant has amended claims 11 and 19 to clarify that embodiments of the present invention determine an adjustment coefficient for the adjustable tap based on information from the back channel and apply the adjustment coefficient to adjust the adjustable tap. This amendment finds support on page 11 of the instant application. No new matter has been added.

Hence, Applicant respectfully submits that independent claims 11 and 19 as presently amended are in condition for allowance. Applicant also submits that claims 12-18, which depend upon claim 11, and claims 20-25, which depend upon claim 19, are for the same reasons in condition for allowance and for reasons of the unique combinations recited in such claims.

CONCLUSION

It is submitted that the present application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,

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